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## PATENT ABSTRACTS OF JAPAN

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(54) INFORMATION PROCESSING METHOD IN COMMUNICATION NETWORK AND  
SYSTEM THEREFOR

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an information processing method by which  
an ISP or the like can surely inform a user being under contract of information.

SOLUTION: At the time of initial access of a user terminal 1an RADIUS server 3  
outputs the IP address of the user terminal 1 to an access DB server 4 posterior to  
user authentication. The access DB server 4 registers the IP address in an inside DB.  
Thena Web server 5 redirects an 'notification page' carrying contents of which a  
system 2 should notify the user terminal 1 in response to an instruction from the  
access DB server 4. Afterwardsa page requested by a user is displayed. When the  
URL of the 'notification page' is designatedand the IP address of the user terminal 1  
is registered in the DB of the access DB server 4the 'notification page' display is not  
operated. When the user performs line disconnectionthe access DB server 4 erases  
the registration of the IP address of the user terminal 1.

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CLAIMS

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[Claim(s)]

[Claim 1] In an information processing system which performs an information service to a user terminal accessed via a communication network, an information processing method in a communication network transmitting information which should be notified to a user terminal from an information processing system at the time of the 1st – access of eye the n-th (n: positive integer) time after a line connection of said user terminal and performing an account information service of back to front of this transmission.

[Claim 2] In an information processing system which transmits a Web page which a user terminal accessed via a communication network requires to said user terminal, when it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal, register and. Transmit information which should be notified to a user terminal from an information processing system and an account Web page of back to front of this transmission is transmitted. An information processing method in a communication network which performs only transmission of a Web page which said user terminal requires when said User Information is registered in said memory measure and is characterized by deleting registration within said memory measure at the time of communication line cutting.

[Claim 3] In an information processing system which transmits a Web page which a user terminal accessed via a communication network requires to said user terminal, when it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal, perform registration of said User Information and access time and. Transmit information which should be notified to a user terminal from an information processing system and an account Web page of back to front of this transmission is transmitted. When said User Information is registered in said memory measure and fixed time has passed since access time which performed only transmission of a Web page which said user terminal requires and was registered into said memory measure, an information processing method in a communication network deleting User Information and access time within said memory measure.

[Claim 4] In an information processing system which performs connection or mail service to a site which a user terminal accessed via a communication network requires, when it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal, register and. Information which should be notified to said user terminal from an information processing system is transmitted. Perform connection or mail service to said site after this transmission and when said User Information is registered in said memory measure, only connection or mail service to said site is performed. An information processing method in a communication network characterized by deleting registration within said memory measure at the time of communication line cutting.

[Claim 5] In an information processing system which performs connection or mail service to a site which a user terminal accessed via a communication network requires, when it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal, perform registration of User Information and access time and, information which should be notified to said user terminal from an information processing system is transmitted. Perform connection or mail service to said site after this transmission and when said User Information is registered in said memory measure, only connection or mail service to said site is performed. An information processing method in a communication network characterized by deleting User Information and access time within said memory measure when fixed time has passed since access time registered into said memory measure.

[Claim 6] In an information processing system which transmits a Web page which a user terminal accessed via a communication network requires to said user terminal. At the time of access from said user terminal, confirm whether User Information of said user terminal is registered into an internal memory measure. When unregistered, register and, a database server which outputs a signal which shows that it was unregistered and outputs a signal which shows ending with registration when registered. Receive a signal from said database server and information which should be notified to a user terminal from an information processing system when unregistered is transmitted. When an account Web page of back to front of this transmission was transmitted and registered and fixed time has passed since registration of a Web server which performs only transmission of a Web page which said user terminal requires and the time of communication line cutting or said memory measure, an information processing system in a communication network possessing a deleting means which deletes registration within said memory measure.

[Claim 7] In an information processing system which performs connection or mail service to a site which a user terminal accessed via a communication network requires, at the time of access from said user terminal, it is confirmed whether User Information of said user terminal is registered into an internal memory measure. A database server which outputs a signal which shows that it was unregistered when unregistered and outputs a signal which shows ending with registration when registered. Receive a signal from said database server and information which should be notified to a user terminal from an information processing system when unregistered is transmitted. A Web server which performs connection or mail service to an account site of back to front of this transmission and performs only connection or mail service to a site which said user terminal requires when registered. An information processing system in a communication network providing a deleting means which deletes registration within said memory measure when fixed time has passed since registration of the time of communication line cutting or said memory measure.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] Especially this invention relates to the information processing method and information processing system in the communication network which has a function which notifies the user who has contracted of information certainly with respect to an Internet Service Provider (henceforth ISP) etc.

[0002]

[Description of the Prior Art] When there is a matter which ISP etc. want to notify certainly to the user who has contracted conventionally (1) e-mail etc. notify to (2) mails etc. which send a notice document through the software only for (3) which describes the address of a homepage with which the notice content is indicated -- it had notified by the method of \*\*.

[0003]

[Problem(s) to be Solved by the Invention] However the method of the above (1) has a limit in the contents which can be notified and a user needs to access the method of (2) at the homepage the notice content is always described to be The method of (3) needed to install and get software special to a user and there was a problem in which it is difficult to ensure a notice respectively. This invention was made in consideration of such a situation and that purpose has ISP etc. in providing the information processing method and information processing system in the communication network which can notify information certainly to the user who has contracted.

[0004]

[Means for Solving the Problem] This invention was made that above-mentioned SUBJECT should be solved and the invention according to claim 1 In an information processing system which performs an information service to a user terminal accessed via a communication network It is an information processing method in a communication network transmitting information which should be notified to a user terminal from an information processing system at the time of the 1st - access of eye the n-th (n: positive integer) time after a line connection of said user terminal and performing an account information service of back to front of this transmission. In an information processing system which transmits a Web page which a user terminal which has accessed the invention according to claim 2 via a communication network requires to said user terminal When it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal register and. Transmit information which should be notified to a user terminal from an information processing system and an account Web page of back to front of this transmission is transmitted It is an information processing method in a communication network which performs only transmission of a Web page

which said user terminal requires when said User Information is registered in said memory measure and is characterized by deleting registration within said memory measure at the time of communication line cutting.

[0005] In an information processing system which transmits a Web page which a user terminal which has accessed the invention according to claim 3 via a communication network requires to said user terminal When it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal perform registration of said User Information and access time and. Transmit information which should be notified to a user terminal from an information processing system and an account Web page of back to front of this transmission is transmitted When said User Information is registered in said memory measure and fixed time has passed since access time which performed only transmission of a Web page which said user terminal requires and was registered into said memory measure It is an information processing method in a communication network deleting User Information and access time within said memory measure.

[0006] In an information processing system which performs connection or mail service to a site which a user terminal which the invention according to claim 4 has accessed via a communication network requires When it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal register and. Information which should be notified to said user terminal from an information processing system is transmitted Perform connection or mail service to said site after this transmission and when said User Information is registered in said memory measure only connection or mail service to said site is performed It is an information processing method in a communication network characterized by deleting registration within said memory measure at the time of communication line cutting.

[0007] In an information processing system which performs connection or mail service to a site which a user terminal which the invention according to claim 5 has accessed via a communication network requires When it confirms whether User Information of said user terminal is registered and is not registered into a memory measure at the time of access from said user terminal perform registration of User Information and access time and. Information which should be notified to said user terminal from an information processing system is transmitted Perform connection or mail service to said site after this transmission and when said User Information is registered in said memory measure only connection or mail service to said site is performed When fixed time has passed since access time registered into said memory measure it is an information processing method in a communication network deleting User Information and access time within said memory measure.

[0008] In an information processing system which transmits a Web page which a user terminal which has accessed the invention according to claim 6 via a communication network requires to said user terminal At the time of access from said user

terminal confirm whether User Information of said user terminal is registered into an internal memory measure when unregistered register and. A database server which outputs a signal which shows that it was unregistered and outputs a signal which shows ending with registration when registered Receive a signal from said database server and information which should be notified to a user terminal from an information processing system when unregistered is transmitted When an account Web page of back to front of this transmission was transmitted and registered and fixed time has passed since registration of a Web server which performs only transmission of a Web page which said user terminal requires and the time of communication line cutting or said memory measure It is an information processing system in a communication network possessing a deleting means which deletes registration within said memory measure.

[0009] In an information processing system which performs connection or mail service to a site which a user terminal which the invention according to claim 7 has accessed via a communication network requires At the time of access from said user terminal it is confirmed whether User Information of said user terminal is registered into an internal memory measure A database server which outputs a signal which shows that it was unregistered when unregistered and outputs a signal which shows ending with registration when registered Receive a signal from said database server and information which should be notified to a user terminal from an information processing system when unregistered is transmitted A Web server which performs connection or mail service to an account site of back to front of this transmission and performs only connection or mail service to a site which said user terminal requires when registered When fixed time has passed since registration of the time of communication line cutting or said memory measure it is an information processing system in a communication network possessing a deleting means which deletes registration within said memory measure.

[0010]

[Embodiment of the Invention] Hereafter this embodiment of the invention is described with reference to Drawings. Drawing 1 – drawing 14 are the figures for explaining the information processing system by the 1st – a 6th embodiment of this invention. Hereafter these [ 1st ] – a 6th embodiment are described one by one. In the following explanation a “notification page” and “notice mail” mean the following respectively. Notification page: Mail which described contents to notify to the user who the homepage “notice mail”: information processing system which described contents to notify to the user who the information processing system (ISP or system for information services) made a contract of made a contract of [0011] (A) The information processing system used in the entrepreneur (entrepreneur who is not performing mail service) who connects an offer-of-information server soon (a 1st and 2nd embodiment)

The information processing system explained below is not the information processing

system that an Internet access provider has but an information processing system which what only makes the offer of information work owns.

[0012]O System (A-1) (a 1st embodiment)

Drawing 1 is a block diagram showing the composition of a 1st embodiment of this invention and drawing 2 is a figure showing the data-processing procedure in the embodiment. In drawing 1 it is an information processing system of the offer-of-information entrepreneur possession connected by the numerals' 1 passing a user terminal and 2 passing the user terminal 1 and a communication network. In this information processing system 23 is a RADIUS (Remote Authentication Dial In User Service) server and attests the user terminal 1 by which dialup connection was made based on User Information memorized inside. The IP address of the accessed user terminal 1 is registered to DB in the access DB (database) server 4 and further when the user terminal 1 cuts a communication line the cutting information for deleting the IP address of the user terminal is given to access DB server 4. Access DB server 4 is a server which has DB into which the IP address of the accessed user terminal 1 is registered performs registration and deletion of the IP address of the user terminal 1 and it performs the check of URL and an IP address. Web server 5 is a server which distributes Web information to the accessed user terminal 1.

[0013]In the above composition different composition from the conventional thing is the following point.

(a) New construction Access DB server 4 : [ Maintenance and deletion URL of a user's IP address] The check (b) reconstruction RADIUS server 3 of an IP address: Add the processing which gives the cutting information for deleting the processing which outputs a user's IP address to access DB server 4 and the IP address of a user terminal to access DB server 4. [0014]Next the data-processing procedure in the

above-mentioned embodiment is explained with reference to drawing 2. \*\* in the following explanation and \*\* ... supports the same sign of drawing 1 and drawing 2.

\*\* At the time of first time access of the user terminal 1 the RADIUS server 3 outputs the IP address of the user terminal 1 to access DB server 4 after user authentication. Access DB server 4 registers this IP address into internal DB. The case where it connected and first time access accesses a circuit from a line disconnection state is said.

\*\* Web server 5 receives the directions from access DB server 4 and redirects a "notification page."

\*\* When there is a user's click after indicating the "notification page" by fixed time or [0015]\*\* Display Paige whom the user demanded. Then when other URL is

specified it displays as it is.

\*\* When URL of a "notification page" is specified and the IP address of the user terminal 1 is registered with reference to the database of access DB server 4 don't perform a "notification page" display but display Paige whom the user demanded.

\*\* When a user does line disconnection access DB server 4 deletes registration of the

IP address of the user terminal 1 by connection from the RADIUS server 3.

[0016]O System (A-2) (a 2nd embodiment)

Drawing 3 is a block diagram showing the composition of a 2nd embodiment of this invention and drawing 4 is a figure showing the data-processing procedure in the embodiment. The point that the embodiment shown in drawing 3 differs from the embodiment shown in drawing 1 is a point that replace with the RADIUS server 3 of drawing 1 and the RAS (Remote Access Service) server 7 is formed. This RAS server 7 connects to the internal network of the information processing system 2 the user terminal 1 accessed via a communication line and has a function which outputs the IP address and access time of the user terminal 1 to access DB server 4.

[0017]In the composition of drawing 3 different composition from the conventional thing is the following point.

(a) new construction access DB server 4: -- a user's IP address and access time -- check (b) reconstruction [ ] of maintenance and deletion URL and an IP address -- the processing which registers a RAS server 7: user's IP address and access time to access DB server 4 is added [0018]Next the data-processing procedure in the above-mentioned embodiment is explained with reference to drawing 4.

\*\* Output the IP address and access time of the user terminal 1 to access DB server 4 at the time of first time access of the user terminal 1. Access DB server 4 registers such IP addresses and access time into internal DB.

\*\* Web server 5 receives the directions from access DB server 4 and redirects a "notification page."

\*\* When there is a user's click after indicating the "notification page" by fixed time or

[0019]\*\* Display the page which the user demanded. Then when other URL is specified it displays as it is. The access time of access DB server 4 is updated at this time.

\*\* First when URL of a "notification page" is specified when the IP address of the user terminal 1 is registered with reference to internal DB access DB server 4 does not perform a "notification page" display but directs the page which the user demanded to method Web server 5 of a display. The access time memorized by internal DB is updated at this time.

\*\* Since User Information still exists in access DB server 4 when a user performs cutting and operation of re connection before the time check (following paragraph \*\*) of access DB server 4 a "notification page" does not transmit.

\*\* Access DB server 4 deletes the registration about the IP address which polls internal DB (check) and has not carried out fixed time access for every fixed time.

[0020](B) The information processing system used in the entrepreneur who provides the Internet connectivity (GW use)

The information processing system explained below is an information processing system which ISP has.

O System (B-1) (a 3rd embodiment)

The block diagram and drawing 7 which drawing 5 and drawing 6 show the composition of a 3rd embodiment of this invention are a figure showing the data-processing procedure in the embodiment. The point that the system shown in these figures differs from what is shown in drawing 1 is a point that GW(Gateway)11 and the router 12 are formed. Web server 5 is formed in drawing 5 and the mail server 6 is formed in drawing 6. GW11 -- from the user terminal 1 -- from -- processing which checks http and a pop protocol and outputs the IP address and port number of the user terminal 1 to access DB server 4 is performed. The router 12 performs routing of the packet from the user terminal 1 and transmits to the Internet.

[0021] In the composition of drawing 5 and drawing 6 different composition from the conventional thing is the following point.

New construction \*\* access DB server 4 : (a) A user's IP address a port number -- maintenance and check \*\*GW11: -- http from a user and a pop protocol -- surveillance User Information -- access DB server 4 -- output (b) reconstruction [ ] -- the processing which gives the cutting information for deleting the IP address of a RADIUS3: user terminal to access DB server 4 is added [0022] Next the data-processing procedure in the above-mentioned embodiment is explained with reference to drawing 7.

<Case [ of a http demand (Internet connectivity demand) ] (refer to drawing 5 and drawing 7)> \*\* GW11 checks the IP address of the packet from the user terminal 1 and a port number and when it is a http demand the IP address and port number are outputted to access DB server 4. Access DB server 4 checks internal DB and when the IP address is not registered it registers.

\*\* Web server 5 receives the connection from access DB server 4 and transmits a "notification page" to the user terminal 1. It connects with URL which the user demanded after the click by fixed time of after or a user. A "notification page" will not be transmitted if the user terminal 1 is registered into DB in access DB server 4 at the time of access of the 2nd henceforth.

[0023] \*\* At the time of line disconnection access DB server 4 deletes registration of the user terminal 1 by connection from the RADIUS server 3.

<Case [ of a mail demand ] (refer to drawing 6 and drawing 7)> \*\* GW11 checks the IP address of the packet from the user terminal 1 and a port number and in a mail demand outputs the IP address and port number to access DB server 4. Access DB server 4 checks internal DB and when the IP address is not registered it registers.

\*\* After access DB server 4 cooperates with the RADIUS server 3 and searches the mail address corresponding to the address of the user terminal 1 it transmits the mail address and "notice mail" to the mail server 6 ranks second to it and transmits the pop demand from the user terminal 1 to the mail server 6. "Notice mail" will not be transmitted if the user terminal 1 is registered into DB in access DB server 4 at the time of access of the 2nd henceforth.

\*\* At the time of line disconnection access DB server 4 deletes registration of the

user terminal 1 by connection from the RADIUS server 3.

[0024]O System (B-2) (a 4th embodiment)

The block diagram and drawing 9 which drawing 8 shows the composition of a 4th embodiment of this invention are a figure showing the data-processing procedure in the embodiment. The point that the system shown in these figures differs from what is shown in drawing 5 is a point that replace with the RADIUS server 3 and the RAS server 7 is formed. In the composition of drawing 8 different composition from the conventional thing is the following point.

(a) New construction \*\* access DB server 4 : output a user's IP address a port number and access time to maintenance and http from a check \*\*GW11:user and output surveillance User Information for a pop protocol to access DB server 4.

[0025]Next the data-processing procedure in the above-mentioned embodiment is explained with reference to drawing 9.

\*\* Check the IP address of a packet and a port number in GW11 and in a http demand and a mail (pop) demand access DB server 4 checks internal DB. And when the IP address is not registered into DB an IP address a port number and access time are registered into DB.

\*\* If it is a http demand a "notification page" will be transmitted to a host. It connects with URL which the user demanded after the click by fixed time of after or a user. A "notification page" will not be transmitted if the user terminal 1 is registered into DB in access DB server 4 at the time of access of the 2nd henceforth.

\*\* Whenever a packet reaches from GW11 update access time.

\*\* Eliminate registration of the user terminal 1 from DB in access DB server 4 about a thing without fixed time access.

[0026](C) The information processing system used in the entrepreneur who provides the Internet connectivity (PROXY use)

The information processing system explained below is an information processing system which ISP has.

O System (C-1) (a 5th embodiment)

The block diagram and drawing 12 which drawing 10 and drawing 11 show the composition of a 5th embodiment of this invention are a figure showing the data-processing procedure in the embodiment. The point that the system shown in these figures differs from what is shown in drawing 5 is a point that replace with GW11 and the PROXY server 14 is formed. Web server 5 is formed in drawing 10 and the mail server 6 is formed in drawing 11. The PROXY server 14 judges http from the user terminal 1 and a pop proxy outputs the IP address of the user terminal 1 and a port number to access DB server 4 and registers them.

[0027]In the composition of drawing 10 and drawing 11 different composition from the conventional thing is the following point.

New construction \*\* access DB server 4 : (a) The IP address of a user terminal A port number. Maintenance and the check \*\*PROXY server 14: It is output (b)

reconstruction to access DB server 4 about judgment User Information in http from a user terminal and a pop proxy. The processing which gives the cutting information for deleting the IP address of a RADIUS user terminal to access DB server 4 is added. [0028] Next the data-processing procedure in the above-mentioned embodiment is explained with reference to drawing 12.

the time of access occurring in a <case [ of a http demand ] (refer to drawing 10 and drawing 12)> \*\* first time http proxy -- access DB server 4 -- an IP address -- a port number output is carried out and it registers with DB of server 4 inside.

\*\* If it is a http demand a "notification page" will be transmitted to a host. It connects with URL which the user demanded after the click by fixed time of after or a user.

A "notification page" will not be transmitted if the user terminal 1 is registered into DB in access DB server 4 at the time of access of the 2nd henceforth.

\*\* At the time of cutting the RADIUS server 3 and access DB server 4 cooperate and eliminate registration of the user terminal 1 from DB in access DB server 4.

[0029] When access occurs in a <case [ of a mail demand ] (refer to drawing 11 and drawing 12)> \*\* first time http proxy an IP address and a port number are registered into DB in access DB server 4.

\*\* After in a mail demand access DB server 4 cooperates with the RADIUS server 3 and searches the mail address corresponding to the address of the user terminal 1 transmit the mail address and "notice mail" to the mail server 6. "Notice mail" will not be transmitted if the user terminal 1 is registered into DB in access DB server 4 at the time of access of the 2nd henceforth.

\*\* At the time of cutting it cooperates with the RADIUS server 3 and eliminate registration of the user terminal 1 from DB in access DB server 4. Although PROXY setting out is required in each user it is not the limitation when a certain management is taken in the equipment by the side of ISP.

[0030] O System (C-2) (a 6th embodiment)

The block diagram and drawing 14 which drawing 13 shows the composition of a 6th embodiment of this invention are a figure showing the data-processing procedure in the embodiment. The point that the system shown in these figures differs from what is shown in drawing 10 is a point that replace with the RADIUS server 3 and the RAS server 7 is formed. In the composition of drawing 13 different composition from the conventional thing is the following point.

(a) New construction \*\* access DB server 4 : output the IP address of a user terminal and a port number to maintenance and http from a check \*\* PROXY server 14: user terminal and output judgment User Information for a pop proxy to access DB server 4. [0031] Next the data-processing procedure in the above-mentioned embodiment is explained with reference to drawing 12.

\*\* When access occurs in a first time http proxy output an IP address a port number and access time to access DB server 4 and register with DB in access DB server 4.

\*\* Transmit a "notification page" to the user terminal 1. It connects with URL which the user demanded after the click by fixed time of after or a user.

A "notification page" will not be transmitted if the user terminal 1 is registered into DB in access DB server 4 at the time of access of the 2nd henceforth.

\*\* Whenever there is access update the access time registered into DB in access DB server 4. About a thing without fixed time access registration of the user terminal 1 is eliminated from the access DB.

It may be accepted once at the time of the line connection of the user terminal 1 and a "notification page" or "notice mail" may be sent and it may be made to send after a line connection in each above-mentioned embodiment n times (positive integer n was beforehand decided to be).

[0032]

[Effect of the Invention] As explained above according to this invention at the time of access from a user terminal. Since it was made to transmit the information which should be notified to a user terminal from an information processing system before processing the demand of the site connection from the user terminal mail service etc. the effect that ISP etc. can notify information certainly to the user who has contracted is acquired.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is a block diagram showing the composition of a 1st embodiment of this invention

[Drawing 2] It is a flow chart for explaining operation of the embodiment.

[Drawing 3] It is a block diagram showing the composition of a 2nd embodiment of this invention.

[Drawing 4] It is a flow chart for explaining operation of the embodiment.

[Drawing 5] It is a block diagram showing the composition of a 3rd embodiment (in the case of a http demand) of this invention.

[Drawing 6] It is a block diagram showing the composition of a 3rd embodiment (in the case of a mail demand) of this invention.

[Drawing 7] It is a flow chart for explaining operation of the embodiment.

[Drawing 8] It is a block diagram showing the composition of a 4th embodiment of this invention.

[Drawing 9] It is a flow chart for explaining operation of the embodiment.

[Drawing 10] It is a block diagram showing the composition of a 5th embodiment (in the case of a http demand) of this invention.

[Drawing 11] It is a block diagram showing the composition of a 5th embodiment (in the case of a mail demand) of this invention.

[Drawing 12] It is a flow chart for explaining operation of the embodiment.

[Drawing 13] It is a block diagram showing the composition of a 6th embodiment of this invention.

[Drawing 14] It is a flow chart for explaining operation of the embodiment.

[Description of Notations]

- 1 -- User terminal
  - 2 -- Information processing system
  - 3 -- RADIUS server
  - 4 -- Access DB server
  - 5 -- Web server
  - 6 -- Mail server
  - 7 -- RAS server
  - 11 -- GW (Gateway)
  - 12 -- Router
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